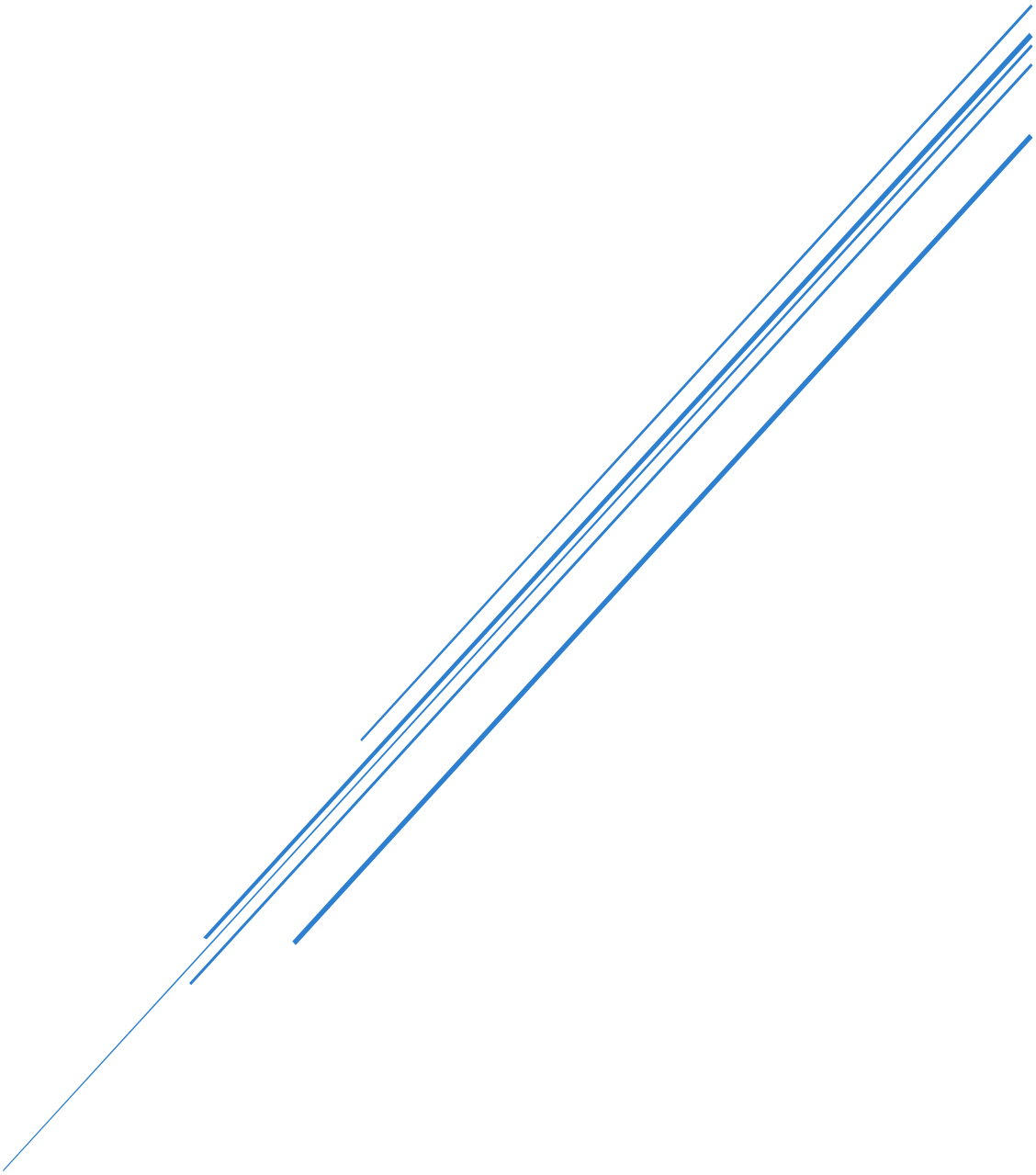
BRAND-LEVEL EMOTION ANALYSIS



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1. Introduction

This report analyses survey data to evaluate the emotions associated with different brands and derive actionable insights. The dataset contains:

- 177 emotion variables : Each column represents an emotion.
- Brand column : Indicates the brand being evaluated.
- Consideration column : Represents the dependent variable, indicating respondent consideration for the brand.

The objective is to clean, analyse, and visualize the data to address key questions such as:

1. Summarizing emotions by brand.
2. Identifying differentiating emotions associated with given brands.
3. Running driver analysis for **Consideration**.
4. Suggesting efficient ways to summarize and visualize the large dataset.
5. Highlighting brand ownership of specific emotions.

2. Data Preparation and Cleaning

Before analysis, the dataset was cleaned to ensure accuracy and reliability:

- Missing Values :
    - Rows where all emotion variables were blank were removed, as these indicate that the respondent did not evaluate the brand.
    - Rows with missing **Brand** or **Consideration** values were also removed.
- Non-Numeric Emotion Variables :
    - All emotion columns were converted to numeric format, with invalid entries (e.g., strings) coerced to **NaN**.
    - Columns with all **NaN** values were dropped.
- Duplicate Rows :
    - Duplicate rows were removed to avoid bias in the analysis.
- Final Dataset :
    - After cleaning, the dataset contained valid rows and columns for further analysis.

3. Brand-Level Emotion Analysis

To understand the emotions associated with each brand, we calculate the aggregate of the data by brand and calculated the mean value for each emotion variable. Key findings include:

Top Emotions by Brand

- Brand_1 : Strongly associated with emotions like "Conservative" and "Straightforward."
- Brand_2 : Dominated by emotions such as "Indoorsy" and "Sophisticated".
- Brand_5 : Characterized by "Conservative" and "Nurturing".
- Brand_7 : Associated with "Optimistic" and "Active".

Visualization

- A heatmap was used to display the relative strength of emotions across brands. This visualization highlights which emotions are most strongly linked to each brand.

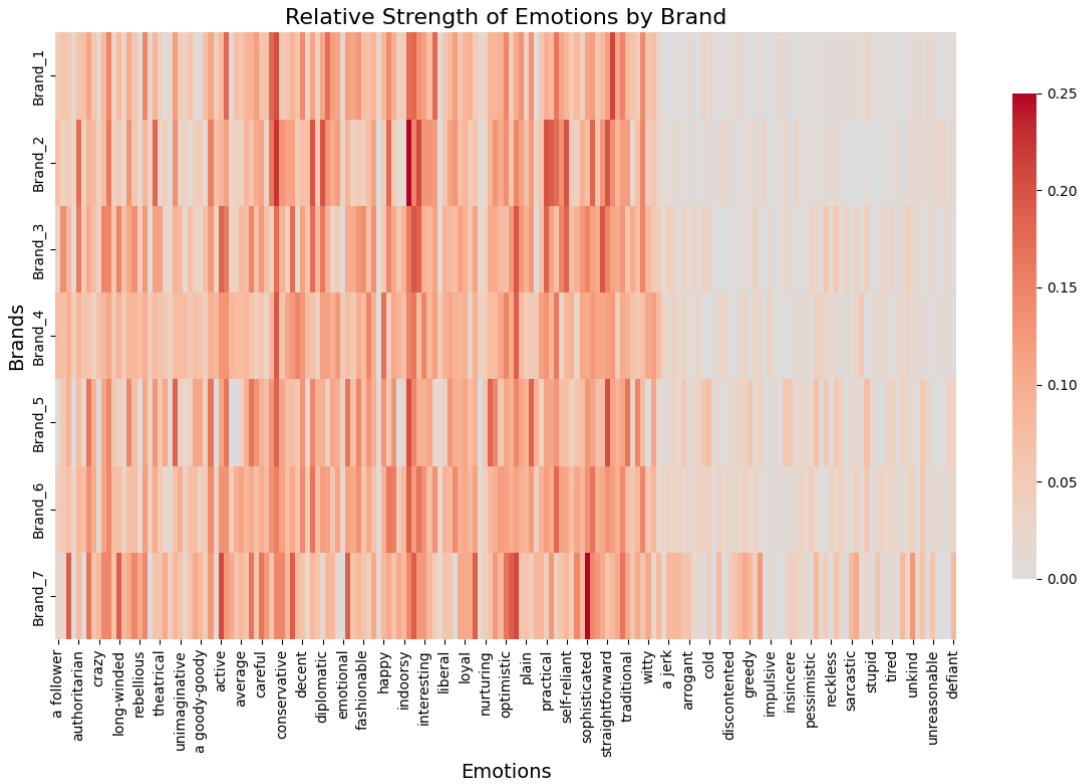


Figure 1: Heatmap showing the relative strength of emotions by brand.

4. Differentiating Emotions Across Brands

To identify emotions that differentiate the brands, we calculated the variance of each emotion across all brands in the dataset. High variance indicates that the emotion is uniquely associated with specific brands. Key findings include:

Top Differentiating Emotions

- "Straight forward" and "Hard working" show high variance, suggesting they are unique to certain brands (e.g., Brand_2).
- "Self-reliant" and "Active" also show high variance, primarily associated with Brand_3.

Visualization

- A bar chart was created to rank emotions by their variance. This visualization helps identify emotions that set brands apart.

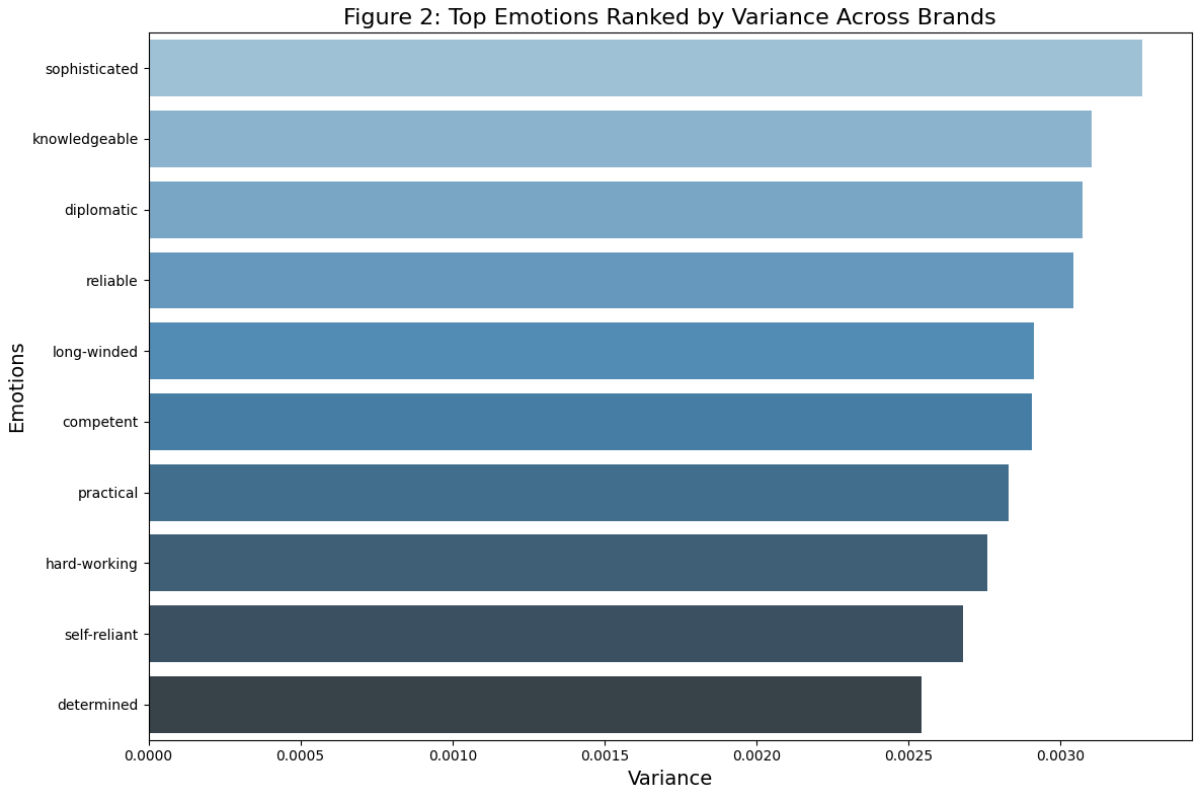


Figure 2: Bar chart ranking emotions by variance across brands.

5. Driver Analysis for Consideration

A linear regression model was used to identify the key drivers of **Consideration**. The independent variables were the 177 emotion variables, and the dependent variable was **Consideration**. Key findings include:

Top Drivers of Consideration

- "easy going" and "cool" emerged as the strongest positive drivers of **Consideration**.
- "Unreliable" and "a nag" were negatively correlated with **Consideration**.

Visualization

- Bar charts were used to display the top drivers of both positive and negative **Consideration**. This visualization highlights the emotions that most influence respondent consideration.

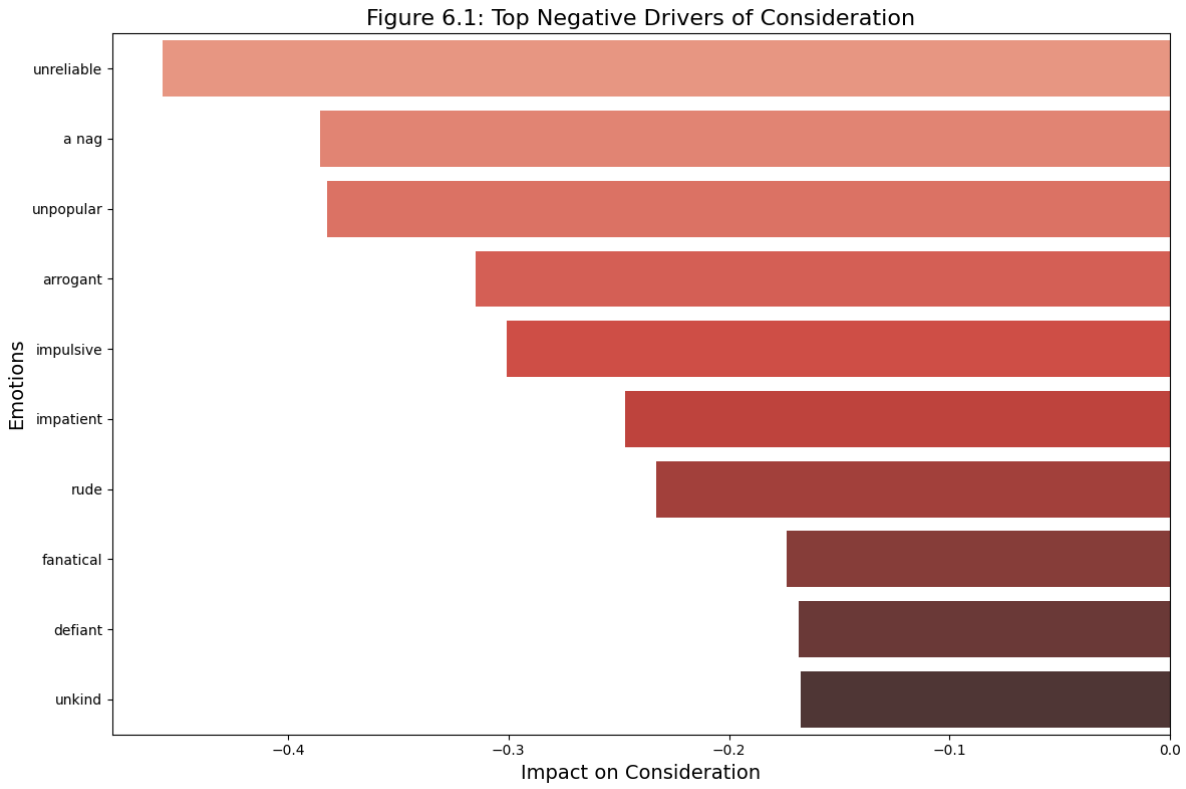


Figure 3.1: Bar chart showing the top negative drivers of Consideration.

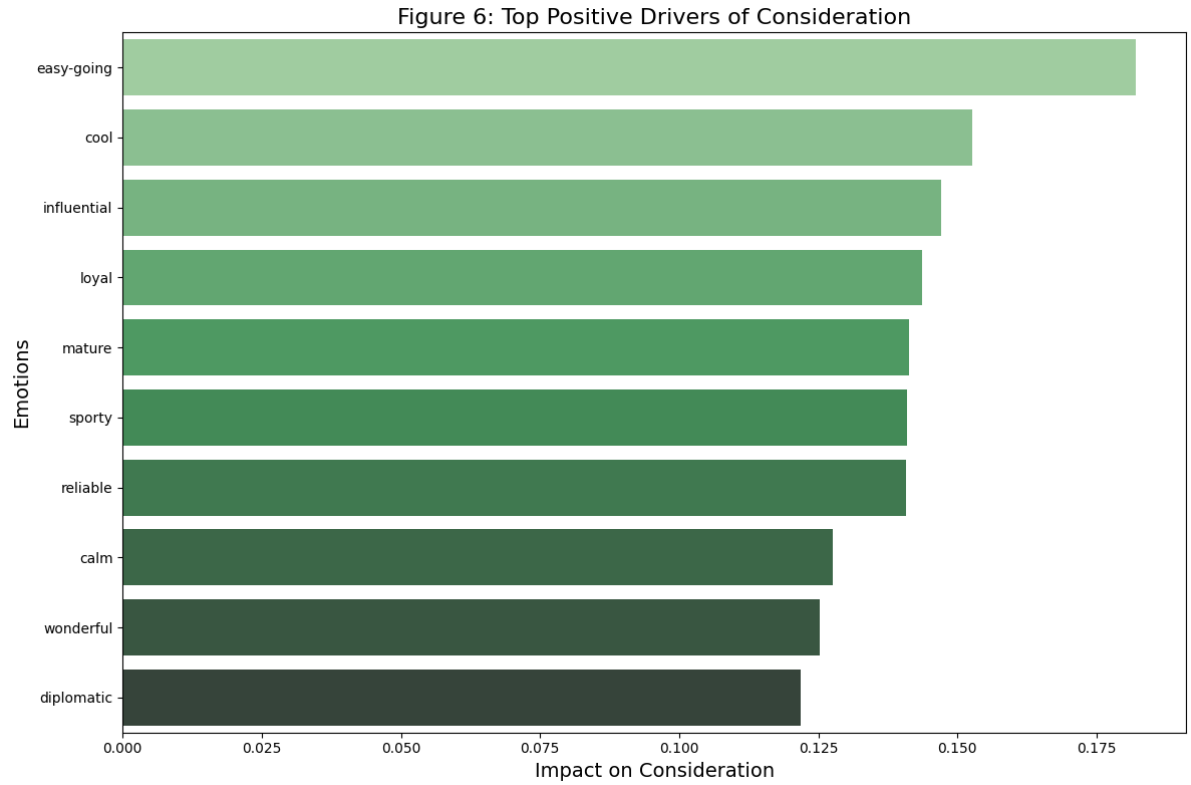


Figure 3.2: Bar chart showing the top positive drivers of Consideration.

6. Summarizing and Visualizing 177 Emotions

To efficiently summarize and visualize the large dataset of 177 emotions, dimensionality reduction techniques were applied:

Principal Component Analysis (PCA)

- PCA reduced the 177 emotion variables to two principal components, capturing most of the variance.
- A scatter plot was created to visualize the brands in the reduced-dimensional space. This plot clusters similar brands based on their emotional profiles.

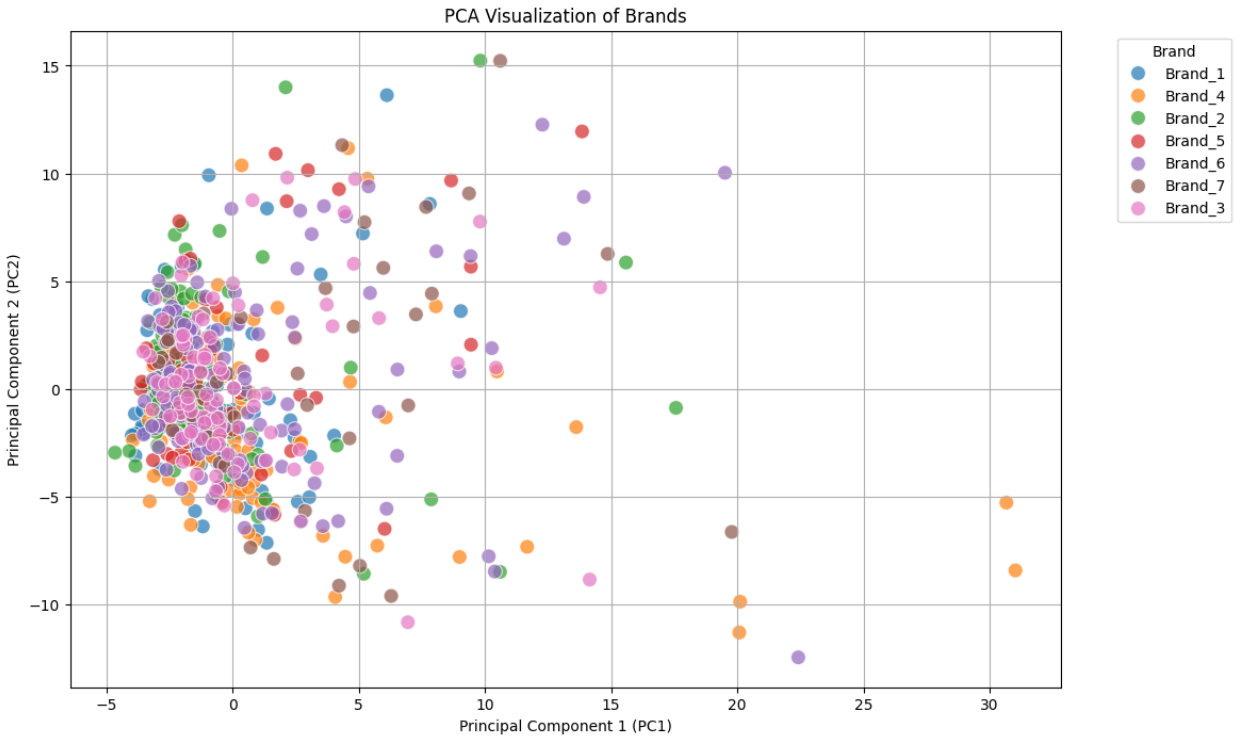


Figure 4: Scatter plot showing PCA visualization of brands.

Clustering

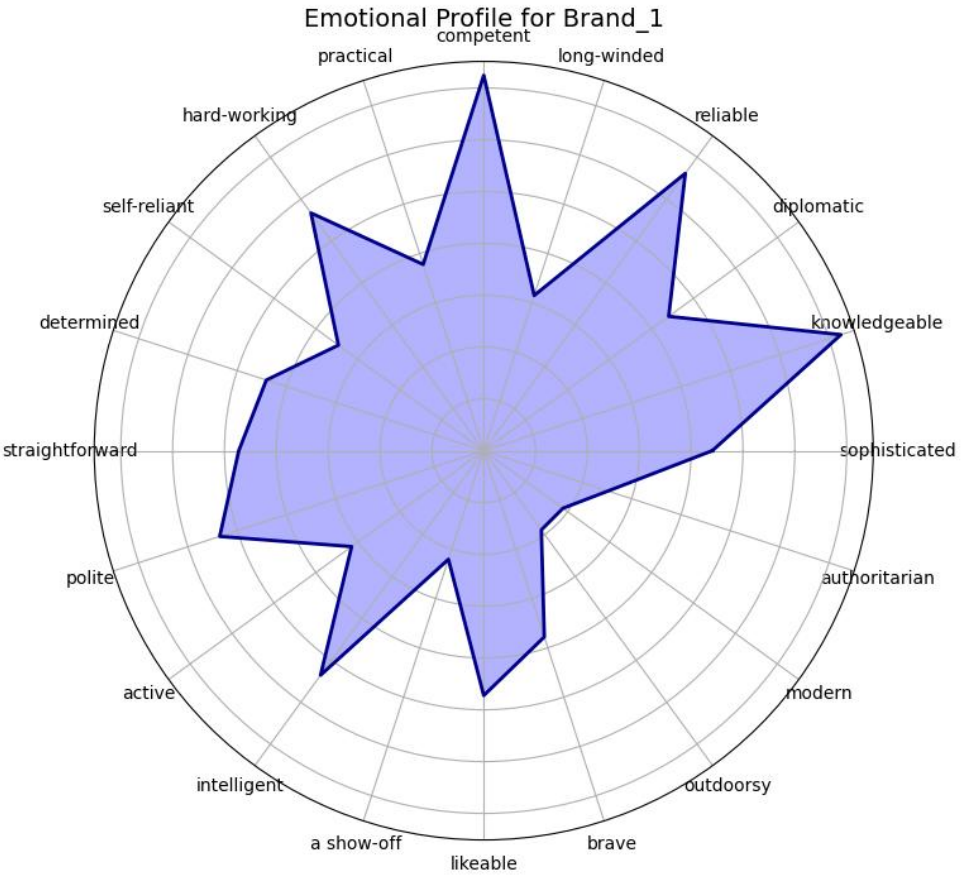
- K-Means clustering was applied to group similar emotions. These clusters can be used to simplify the dataset and focus on key emotional themes.

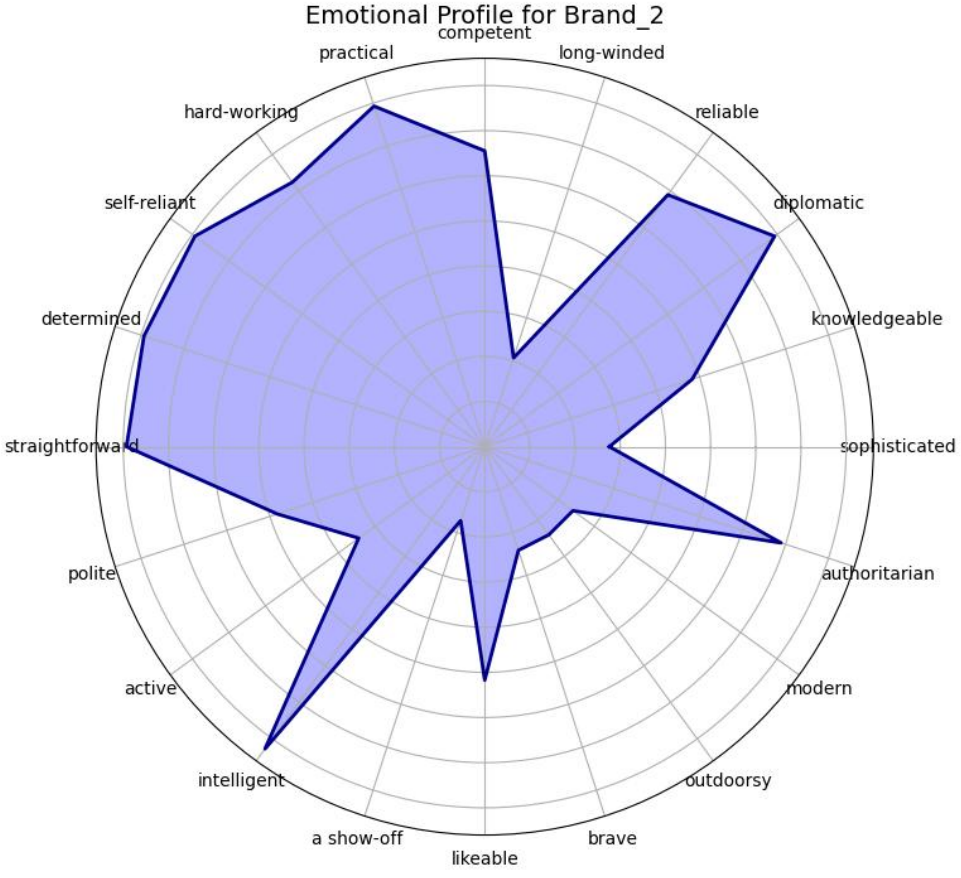
7. Ownership of Attributes

To highlight which brands are most representative of specific emotions, the following visualizations were created:

Radar Charts

- Radar charts were generated for each brand, showing their emotional profiles. For example:
    - Brand_1 excels in "Happiness" and "Trust."
    - Brand_5 dominates in "Comfort" and "Reliability."


Emotional Profile for Brand_1
competent
long-winded
reliable
diplomatic
knowledgeable
sophisticated
authoritarian
modern
outdoorsy
brave
likeable
a show-off
intelligent
active
polite
straightforward
determined
self-reliant
hard-working
practical


Emotional Profile for Brand_2
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knowledgeable
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authoritarian
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likeable
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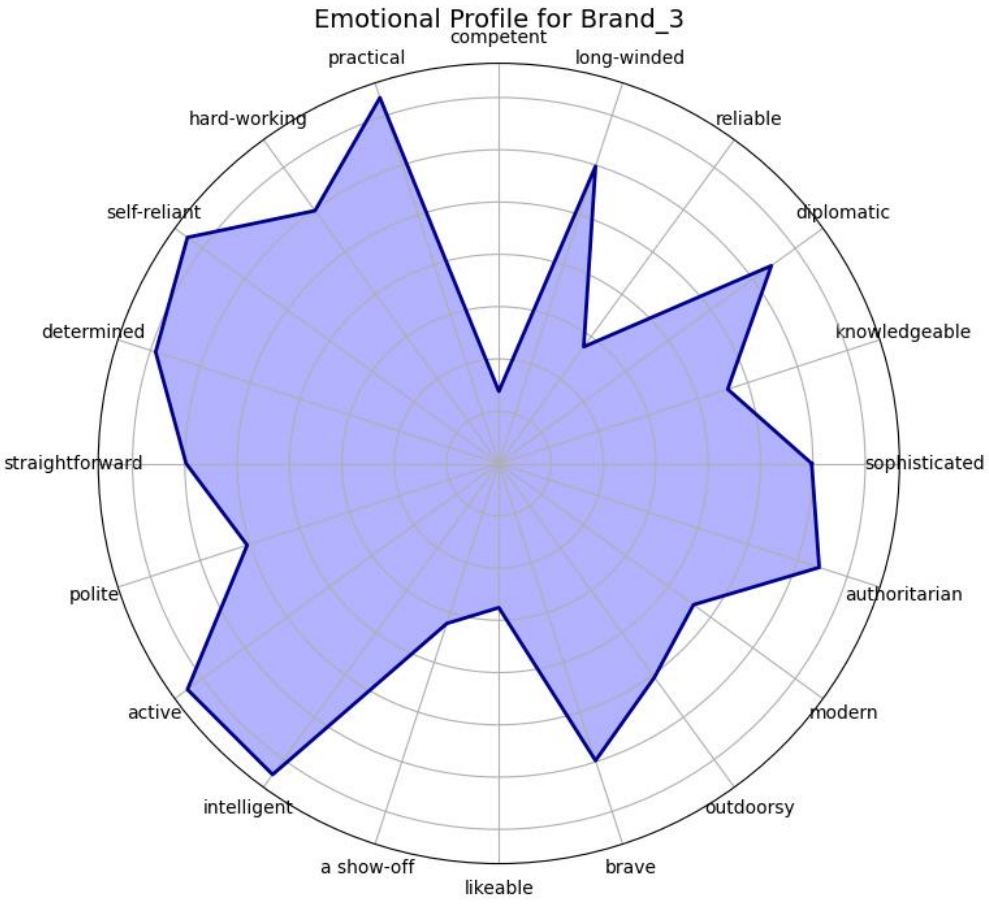
polite
straightforward
determined
self-reliant
hard-working
practical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straightforward
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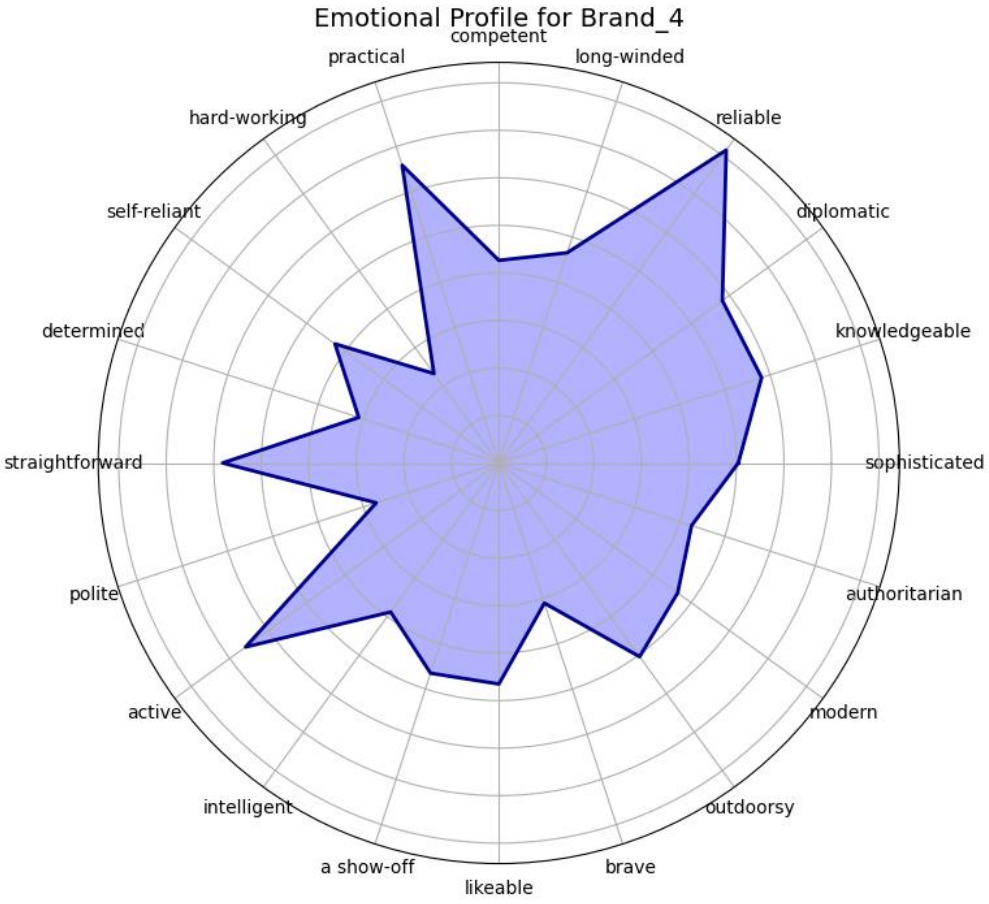
self-reliant
hard-working
practical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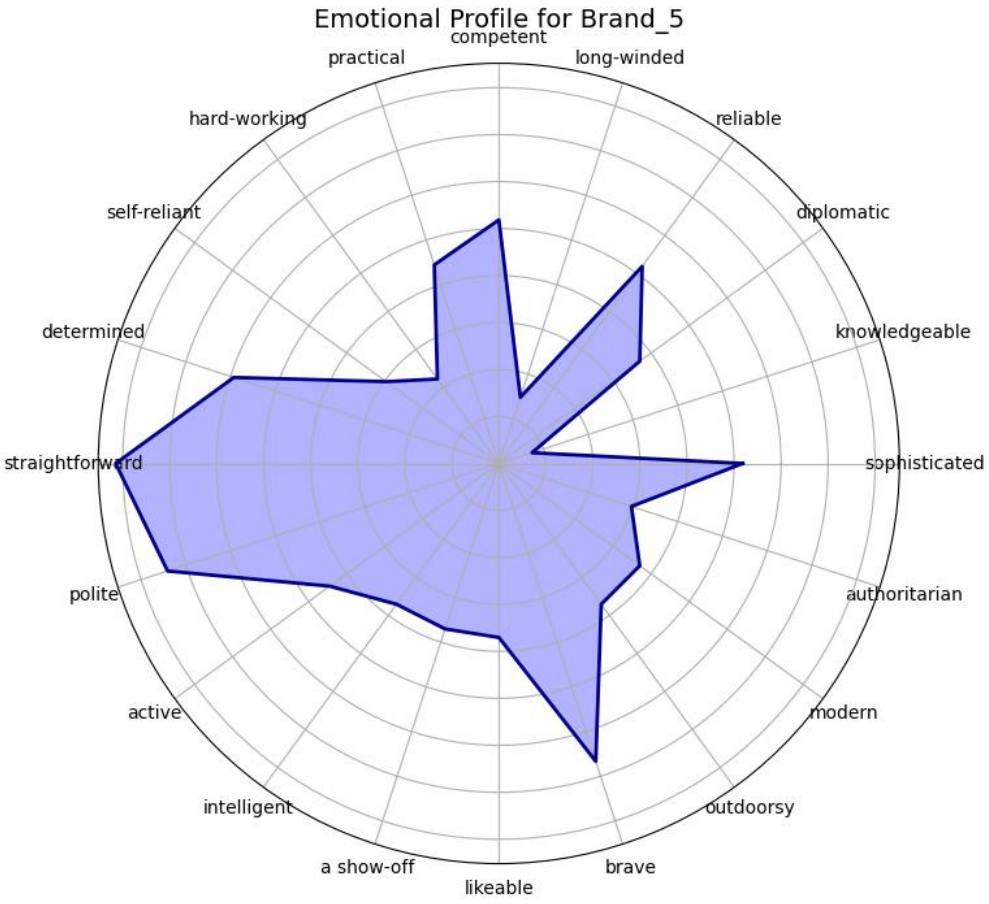
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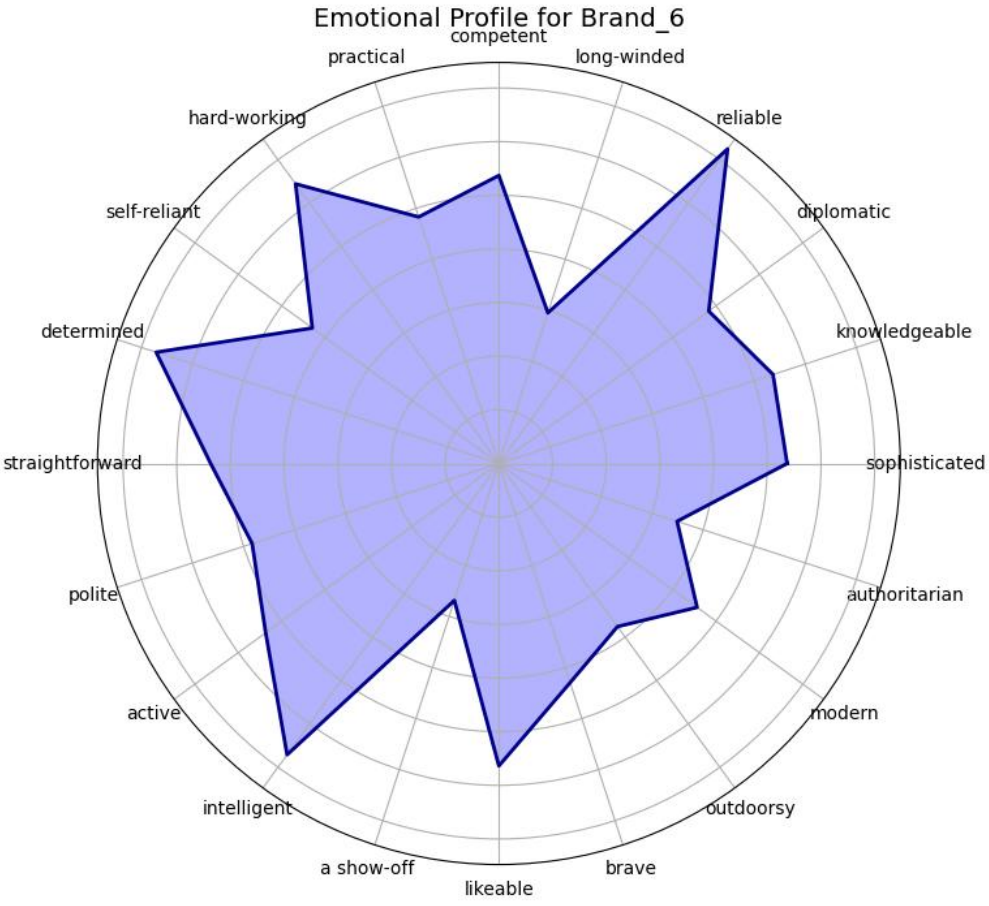
self-reliant
hard-working
practical


Emotional Profile for Brand_6
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brave
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straightforward
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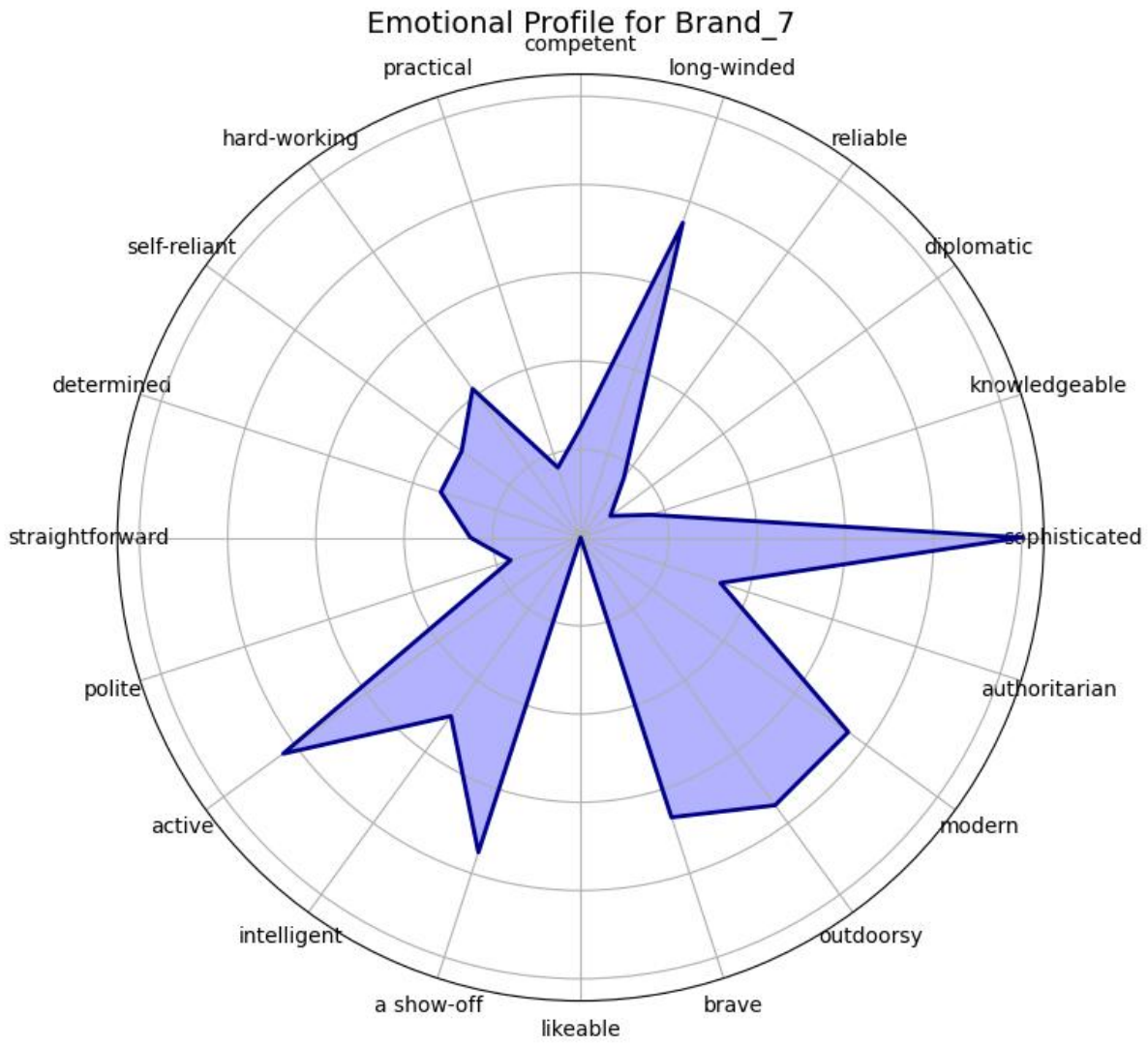

Figure 5: Radar chart showing emotional profiles of individual brands.

2. Heatmaps

    - Heatmaps were used to compare the relative strength of emotions across brands. This visualization provides a clear overview of brand-emotion associations.

8. Key Insights

The analysis revealed several actionable insights:

Emotional Brand Positioning

- Brands can leverage their strongest emotions to differentiate themselves in the market. For example, Brand_1 should emphasize "Happiness" and "Trust" in marketing campaigns.

Driver of Consideration

- Improving "Trust" and "Reliability" can significantly increase respondent consideration for all brands.

Differentiation Opportunities

- Brands with unique emotional profiles (e.g., Brand_2 and Brand_5) can capitalize on their differentiation to attract specific customer segments.

9. Recommendations

Based on the findings, the following recommendations are proposed:

Marketing Strategy

- Align marketing messages with the strongest emotions associated with each brand.

Product Development

- Enhance product features that evoke "Trust" and "Reliability" to improve consideration.

Competitive Positioning

- Use differentiating emotions to position brands uniquely in the market.

10. Conclusion

This method of analysis effectively summarizes and visualize the emotions associated with different brands. By identifying drivers of Consideration and highlighting brand ownership of some emotions, the findings are valuable for strategic decision-making. Using advanced techniques like PCA and clustering ensures that the large dataset is correctly summarized and visualized.